# New Combinations in the Florida Flora II

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ABSTRACT. New combinations are made for the following species and varieties within the flora of Florida: Andropogon elliottii var. stenophyllus, Arnoglossum ovatum var. lanceolatum, Dalea albida, Dalea gracilis, Eupatorium album var. petaloideum, Harrisia eriophora var. fragrans, Harrisia gracilis var. aboriginum, Harrisia gracilis var. simpsonii, Houstonia procumbens var. hirsuta, Imperata cylindrica var. mexicana, Liatris pauciflora var. secunda, Pisonia discolor var. floridana, Pityopsis nervosa var. tracyi, Tephrosia virginiana var. mohrii, Yucca flaccida var. smalliana.

Key words: Agavaceae, Andropogon, Arnoglossum, Asteraceae, Cactaceae, Compositae, Dalea, Eupatorium, Fabaceae, Gramineae, Harrisia, Houstonia, Imperata, Leguminosae, Liatris, Nyctaginaceae, Pisonia, Pityopsis, Poaceae, Rubiaceae, Tephrosia, Yucca.

As compilation of Florida's vascular plant inventory creeps toward completion, taxa continue to be encountered for which no currently accepted name is available. These taxa—all of them familiar to an earlier generation of botanists, and all of them recognizable in the field—have been orphaned and left nameless by transfer of their generic or specific name to synonymy elsewhere. Other taxa, though not wholly abandoned, have been placed by forced adoption with genera or species to which they do not comfortably belong.

This listing is a continuation of an effort to restore species and infraspecific taxa to ranks appropriate to their morphological differences (cf. Long, 1970; Ward, 2001; Wunderlin & Hansen, 2001). Such an effort is, of course, a necessary component of taxonomic revision, where judgment has changed as to proper generic/specific alignments and names, and where subordinate taxa must either be renamed or abandoned. The number of these unnamed or misnamed subordinate taxa is surprisingly large. It is common practice for persons who undertake taxonomic revisions to reduce to synonymy the less well-defined subordinate taxa that had been recognized by previous workers. Such practice is perhaps commendable, for mindless, wholesale transfer of these lesser taxa would burden the literature

with innumerable unneeded names and obscure the distinctions that the revisionist more fully understands.

But when a student undertakes reconsideration of a genus of appreciable size and cannot be as familiar as he might wish with the plants in the field, he may omit those lesser taxa of which he is unsure but that local botanists may recognize. Or he acknowledges the lesser taxon but assigns it a rank that is inappropriate to its characteristics.

The Florida flora, rich both in number of species and in entities that merit infraspecific rank, is undergoing rapid change, not only in the arrival of species new to the state and disappearance of its natives, but change in the names of long-familiar taxa. At times these name changes are unavoidable, for agreed-upon new understanding of specific/generic alignments requires new names to reflect the new status.

As previously (Ward, 2001), in each of the following transfers earlier authors have treated the transferred taxon as worthy of recognition; no new taxa are proposed. And where generic realignments have been proposed and are here accepted, acknowledgment is thereby given to the merit of those changes. As before, though the *International Code of Botanical Nomenclature* (Greuter et al., 2000) permits both subspecies and variety to be employed at infraspecific levels, preference is expressed here for "varietas" as the sole infraspecific rank. Types of the taxa discussed here have not been seen except where so indicated.

At bottom, the determination of rank does not depend solely on explicit morphological criteria. More critical, if unquantifiable, is the experience of a writer to equate new data sets with those with which he is more familiar, the better to develop and maintain a stable, internally consistent nomenclature ranking. The present effort is intended as a step in that direction.

Always, one is reminded of the well-loved phrase of J. M. Greenman (Anderson, 1969), surely true also of lesser rankings, that "Species are but judgments." It is hoped that the judgments expressed here may find support.

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#### AGAVACEAE

Yucca flaccida Haworth var. smalliana (Fernald)
D. B. Ward, comb. et stat. nov. Basionym: Yucca smalliana Fernald, Rhodora 46: 8. 1944.
TYPE: U.S.A. Florida: Duval Co., sandy soil, near Jacksonville, May [1893?], Curtiss 2950 (holotype, GH; isotype, FLAS).

As presciently noted by Fernald (1944: 5), Yucca is "always a baffling genus to work with from herbarium material." He was confronted with just that challenge when he addressed the nomenclature of the Yucca familiar to him in eastern Virginia. His decision appears unchallenged, that the plant known to Small (1933) as Y. concava Haworth represents the true Y. filamentosa L.

Two taxa were involved, set apart from other eastern species of the genus by fibers that peel back from the leaf margins (well described by Godfrey, 1988). Though at no point does Fernald refer to these distinctive marginal fibers, they were apparent to early authors; Linnaeus (1753) cited the Gronovius phrase-name: Yucca foliis lanceolatis acuminatis integerrimis margine filamentosis. With Virginia the source of the Gronovius material, and with no other Yucca native in that area, there is no reason to doubt the Virginia plant known to Fernald is the same as that known to Linnaeus.

Small (1933), however, had applied Yucca filamentosa to a similar but more southern plant, one only sparingly extending north to the Carolinas. By Fernald's transfer of Y. filamentosa to his Virginia plant, he left the more southern plant without a name. He then chose a Curtiss collection from Jacksonville, Florida, as representative, and named it Yucca smalliana in acknowledgment of J. K. Small, who he believed had done much to elucidate these southeastern yuccas.

Though Fernald (1944) discussed in detail the differences between his Virginia Yucca filamentosa and the Florida type of his Y. smalliana, his unfamiliarity in the field with the second, more southern plant caused him to overlook an aspect difference between these plants that readily permits them when in flower to be distinguished even at a distance. The robust rosette of basal leaves and stocky, floriferous inflorescence of Y. filamentosa has made it a popular ornamental of old gardens and cemeteries. It was carried as a grave marker by the Scotch-Irish and German pioneers who moved out of Virginia into early Kentucky, then a generation later into the newly available Indiana territory and throughout the Midwest (cf. Deam, 1940: 316). The southern plant, in contrast, with its tall, mostly naked scape and relatively few flowers, is little cultivated. Fernald also understated the minimal (here, varietal) differences between his new *Y. smalliana* and a third entity recognized by Small, *Y. flaccida* Haworth.

Both of Fernald's taxa were recorded for the Carolinas by Ahles (1964, 1968). He accepted the assignment of Yucca filamentosa. But he chose to treat the second entity at varietal level, as Y. filamentosa var. smalliana (Fernald) Ahles. Since Ahles later (1968) placed Y. flaccida in synonymy, it may be argued he erred in using smalliana, for there are prior varieties of Y. flaccida, which automatically establish the prior varietal autonym flaccida (cf. Art. 26.3, Greuter et al., 2000). But Ahles's new combination was valid when published (1964) since no synonymy was then listed.

Yet Fernald's selected type of Yucca smalliana, by description, by examination of a duplicate of Curtiss's collection (FLAS 46959), and by its location far to the south of known natural Y. filamentosa, readily falls within Y. flaccida s.l., a judgment supported by Duncan and Kartesz (1981) and Godfrey (1988). With priority established at varietal level by variety smalliana (Fernald) Ahles, Fernald's new entity is properly transferred to Y. flaccida.

A two-part caveat is in order, however. Because Haworth's specimens of *Yucca flaccida* are not extant, the validity of the new combination rests on the presumption (and probability) that Haworth's material would now be treated as representative of *Y. flaccida* s. str., as presently recognized. Validity requires also that the several varieties described under *Y. filamentosa* and *Y. flaccida* by Trelease (1902) and others either fall within *Y. filamentosa* or, if *Y. smalliana*, outside the parameters of variety *smalliana*.

#### CACTACEAE

Harrisia eriophora (Pfeiffer) Britton var. fragrans (Small) D. B. Ward, comb. et stat. nov. Basionym: Harrisia fragrans Small, in Britton & Rose, The Cactaceae 2: 149. 1920. TYPE: U.S.A. Florida: St. Lucie Co., hammock on sand dune 6 mi. S of Ft. Pierce, 20 Dec. 1917, J. K. Small 8457 (holotype, NY; isotypes, GH, US).

Harrisia gracilis (P. Miller) Britton var. aboriginum (Small) D. B. Ward, comb. et stat. nov. Basionym: Harrisia aboriginum Small, in Britton & Rose, The Cactaceae 2: 154. 1920. TYPE: U.S.A. Florida: Manatee Co., hammock, Terra Ceia Island, 29 Apr. 1919, J. K. Small, Cuthbert & DeWinkler s.n. (lectotype, designated by Benson (1982: 934), NY; isolectotype, US).

Harrisia gracilis (Miller) Britton var. simpsonii (Small) D. B. Ward, comb. et stat. nov. Basionym: Harrisia simpsonii Small, in Britton & Rose, The Cactaceae 2: 152. 1920. TYPE: U.S.A. Florida: Monroe Co., hammock near Flamingo, May 1919, J. K. Small s.n. (lectotype, designated by Benson (1982: 934), NY).

After Britton (1908) set *Harrisia* apart from the all-inclusive genus *Cereus* Miller, his protege, J. K. Small (in Britton & Rose, 1920), placed names on the forms he encountered in southern Florida. The influence of Benson (1982), however, who preferred retention of a comprehensive *Cereus*, has reduced attention given to these endemic Florida segregates. The three taxa addressed here are consistently given recognition (Benson, 1982; Austin, 1984; Wunderlin, 1998), but at different levels.

In the judgment of Austin (1984), whose field knowledge of these plants is unequaled, the small differences between the Florida taxa of *Harrisia gracilis* (his *Cereus gracilis*) and the differences that separate them from their putative parent (the non-Florida, typical *H. gracilis*) justify varietal status. Benson (1982) also employed varietal rank in *Cereus*. Both authors retained Small's *H. fragrans*, but at varietal level in *Cereus*. The increasing acceptance of a moderate dissection of the larger *Cereus*, by recognition of the segregate genus *Harrisia*, makes the new combinations necessary.

These plants have been classified by the Florida Department of Agriculture as "endangered" and as such have protection of law. Because the Florida statute (F.S. 581.185) does not provide for classification of infraspecific taxa, they are listed as *Harrisia eriophora* and *H. gracilis*.

# COMPOSITAE

Arnoglossum ovatum (Walter) H. Robinson var. lanceolatum (Nuttall) D. B. Ward, comb. et stat. nov. Basionym: Cacalia lanceolata Nuttall, Genera N. Amer. Plants 2: 138. 1818. TYPE: U.S.A. "Florida" [on label], [date?], Baldwin s.n. (lectotype, designated here, PH).

Though Nuttall stated his new species to have been provided to him by (William) Baldwin, he imprecisely noted its source as "Georgia and Florida" and did not designate a type. The only appropriate specimen (PH) is labeled simply "(Nutt.)" and "Florida." The present selection formalizes Nuttall's apparent intent.

The conventional treatment of *Cacalia L.* (cf. Pippen, 1978) is now abandoned as irretrievably ambiguous (Wagenitz, 1995; Brummitt, 1998; Nic-

olson, 1999), with all species reassigned to other genera. Though Kral and Godfrey (1958) understood (and well illustrated) two distinct varieties in what is now *Arnoglossum ovatum*, subsequent authors have failed to give status to Nuttall's narrow-leaved variant.

Eupatorium album L. var. petaloideum (Britton)
R. K. Godfrey ex D. B. Ward, comb. et stat.
nov. Basionym: Eupatorium petaloideum Britton, in Small, Bull. Torrey Bot. Club 24: 492.
1897 ["petalodium," corr. Small, 1903: 1168].
TYPE: U.S.A. Florida: Duval Co. [1892?],
Curtiss 1190 (lectotype, designated here, NY).

Though the accomplishments of Robert K. Godfrey in clarifying the southeastern flora were many (cf. Kral, 2001), one of his major efforts failed to reach publication and is thus little recognized. This was Godfrey's prolonged and detailed field study of the genus *Eupatorium*. Through the 1960s and early 1970s he devoted many hundreds of hours to tracing down and visiting the type localities of the numerous names assigned to southeastern members of this genus. Repeatedly he concluded (pers. comm.) that certain of these names did not deserve the oblivion to which later authors had assigned them.

Eupatorium petaloideum Britton in Small (1897) was one such name. In the field Godfrey found plants that matched Britton's description, commonly not in association with *E. album* and distinguishable from that species. He maintained that Britton's taxon "has to be recognized at some level apart from *E. album*" (pers. comm., Feb. 1987). Though this judgment—never placed in print—is in contrast with that of Cronquist (1980), Clewell (1985), and Wunderlin (1998), Godfrey's superior field experience justifies retention of the taxon at a subordinate level.

Liatris pauciflora Pursh var. secunda (Elliott) D. B. Ward, comb. et stat. nov. Basionym: Liatris secunda Elliott, Sketch 2: 278. 1822? TYPE: U.S.A. Georgia: Savannah, S. Elliott s.n. (holotype, CHARL presumed lost).

Following the monograph of Gaiser (1946), two previously confused Florida taxa of *Liatris* have seemed clearly defined. *Liatris pauciflora* Pursh was described as having the stem and leaves glabrous, with an erect, racemose, or paniculate inflorescence; *L. secunda* Elliott was distinguished by the stem short-pubescent, and the inflorescence racemose with heads frequently secund. [Other authors (Small, 1933; Clewell, 1985; Wunderlin,

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1998) supplemented these small differences with the observation of eglandular phyllaries in *L. pauciflora* and glandular-dotted phyllaries in *L. secunda*, a characteristic seen neither by Gaiser nor apparent on recent collections (FLAS, FSU).] But the weak morphology was not critical; the two taxa were allopatric, with *L. pauciflora* in the central and northern peninsula and sparingly into southeastern Georgia, and *L. secunda* disjunct, in the western panhandle and extending northward through Georgia and into the Carolinas.

The pattern shown by these two taxa is quite familiar, with a widely distributed continental population and a near-endemic peninsular population, a presumed consequence of Pleistocene glacial flooding and isolation. But, barring knowledge of origin, the two are separable on little more than the difference in pubescence, with perhaps a greater tendency in *Liatris secunda* toward secundbranched inflorescences (itself a consequence of an arching stem). If they were sympatric, specific rank would be unlikely to have been proposed. In view of the real but minor observable differences, varietal rank is sufficient.

Pityopsis nervosa (Willdenow) Dress var. tracyi (Small) D. B. Ward, comb. et stat. nov. Basionym: *Chrysopsis tracyi* Small, Southeast U.S. 1182, 1339. 1903. TYPE: U.S.A. Florida: Manatee Co., in sand, Palma Sola, 3 Dec. 1901, *Tracy* 7713 (holotype, NY).

The judgment as to whether a comprehensive Chrysopsis Elliott should also encompass Pityopsis Nuttall (Dress, 1953; Cronquist, 1980) is progressively moving toward the negative (Small, 1933; Dress, 1975; Clewell, 1985; Semple & Bowers, 1985; Wunderlin, 1998). But Semple and Bowers (1985) misplaced the large-headed Pityopsis tracyi Small by assigning it varietal status within the small-headed P. graminifolia (Michaux) Nuttall. As clearly recognized by Dress (1953, 1975), the large-headed complex is best distinguished as P. nervosa. Within P. nervosa s.l., variety nervosa (with narrow, ascending leaves) occurs throughout the state, and variety tracyi (with broad, spreading leaves) is endemic in the peninsula (north to Marion County).

### GRAMINEAE

Andropogon elliottii Chapman var. stenophyllus (Hackel) D. B. Ward, comb. et stat. nov. Basionym: Andropogon virginicus L. var. viridis Curtiss ex Hackel in DC. subvar. stenophyllus Hackel, in DC., Monogr. Phanerog. 6: 411. 1889. TYPE: U.S.A. Florida: *Chapman s.n.* (lectotype, designated by Campbell (1983: 217), W; isolectotype, W).

By its very quality, the excellent monograph by Campbell (1983) of the Andropogon virginicus complex has deflected later workers from inclination to challenge one name change imposed on a wide-spread member of the group. Within this difficult genus the species known since Chapman's first flora (1860) as A. elliottii Chapman stands out with its distinctive overlapping and inflated sheaths. Campbell rejected this name, replacing it with the previously questionable and unused A. gyrans Ashe.

Campbell (1983) made the novel argument that Andropogon elliottii, even though Chapman's materials and description were unmistakably this species, is nevertheless based on A. argenteus Elliott (1816) since Chapman parenthetically included that name (a synonym of A. ternarius Michaux) at the bottom of his original description.

As a replacement name Campbell selected *Andropogon gyrans* Ashe (1898). This name, however, had no holotype, and Campbell acknowledged "the equivalence . . . is questionable" of the Ashe specimen he selected as a neotype. Hitchcock and Chase (1951: 812) had referred Ashe's name to *A. elliottii*, but with a query.

Campbell is incorrect in claiming *A. argenteus* Elliott as Chapman's basis. Chapman had clearly indicated he did not accept Elliott's name (since it was a homonym of *A. argenteus* DC.) and in his later revision (Chapman, 1897) omitted the reference entirely. With restoration of *Andropogon elliottii* Chapman, the infraspecific taxa defined by Campbell become: *Andropogon elliottii* var. *elliottii* [= *A. gyrans* var. *gyrans*] and variety *stenophyllus* (Hackel) D. B. Ward [= *A. gyrans* var. *stenophyllus* (Hackel) Campbell].

Imperata cylindrica (L.) P. Beauvois var. mexicana (Ruprecht) D. B. Ward, comb. nov. Basionym: Imperata brasiliensis Trinius var. mexicana Ruprecht, Bull. Acad. Sci. Bruxelles 9: 245. 1842. TYPE: Mexico. Vera Cruz: [date?], Galeotti 5678 (holotype, K).

Two forms of *Imperata* have been introduced into Florida. The first to appear [earliest record: Miami, Mar. 1905, *Britton s.n.* (FLAS, NY)] was identified as *I. brasiliensis* Trinius; it has remained restricted to south Florida. The second [earliest record: Gainesville, 29 Mar. 1937, *Ritchey s.n.* (FLAS)] was introduced as *I. cylindrica* (L.) P. Beauvois; it has spread aggressively throughout most of the state (still rare in south Florida), largely by vegetative

means. This second taxon, known as Cogon-grass, is presently classified in Florida as a Category I invasive weed; on a global scale it has long been ranked as one of the world's top ten worst weeds (Holm, 1969).

Though these taxa are presumed to come from different continents (South America and Asia), and are consistently treated as specifically distinct (e.g., Gabel, 1982), in Florida they can scarcely be distinguished. The most recent field study (Lippincott, 1997), as well as a guide to the state's flora (Wunderlin, 1998), rely on the number of anthers per floret as the sole discriminator, a cryptic and inconsequential basis for species delimitation (one anther in I. brasiliensis; two in I. cylindrica). Indeed, this character fails in cultivated materials (C. Lippincott, pers. comm., Sep. 2001). There are additional aspect differences [inflorescence narrowly spicate, plants low (to 0.5 m) in I. brasiliensis; inflorescences somewhat diffuse, plants taller (to 1.5 m) in I. cylindrica]. But separation, both in the field and in the herbarium, remains difficult and uncertain.

Imperata is a poorly understood genus of 39 names (Chase & Niles, 1962) and eight or nine species (Clayton & Renvoize, 1986; Gabel, 1982). One is perhaps presumptuous to make a new combination here, in the absence of a perspective beyond Florida, by uniting taxa that are so widely assumed to be specifically distinct. But the practical difficulty of determining which taxon is present, and the importance of bringing full force to bear in restricting the spread of this pernicious weed, suggests the wiser strategy lies in treating the two taxa as a specific unit.

# LEGUMINOSAE

Dalea albida (Torrey & A. Gray) D. B. Ward, comb. et stat. nov. Basionym: Petalostemon carneum Michaux var. albidum Torrey & A. Gray, Fl. N. Amer. 1: 311. 1838. TYPE: U.S.A. Georgia: Milledgeville, [date?] Boykin s.n. (holotype, NY).

Dalea gracilis (Nuttall) D. B. Ward, comb. nov. Basionym: Petalostemon gracile Nuttall, J. Acad. Nat. Sci. Phil. 7: 92. 1834. TYPE: U.S.A. "W. Flor." [on label], [date?], N. A. Ware s.n. (lectotype, designated here, PH).

Nuttall (1834: 92) reported his new species as "Hab. In the lower part of Alabama and Florida," without designating a type or collector. As indicated by the slips affixed to his specimens (PH), he had received materials from Nathaniel A. Ware (from

Florida), from Hezekiah Gates (from Alabama), and from William Baldwin (source not indicated). The first of these was marked by D. K. Wemple in 1965 as "typus," though his published report (1970: 33) stated only "Type in PH." The present selection formally confirms his choice.

The excellent treatment of *Petalostemon* by Wemple (1970) underlies the revision by Barneby (1977), who included all species of *Petalostemon* within the more inclusive *Dalea*. But Barneby, lacking Wemple's Florida field experience, understated the magnitude of differences separating *Petalostemon albidum* (Torrey & A. Gray) Small from the related *P. carneum* (cf. Small, 1933; Wemple, 1970); he assigned the taxon to *Dalea carnea* var. *albida* (Torrey & A. Gray) Barneby. Similarly, he minimized the differences separating *Petalostemon gracile* Nuttall from *P. carneum*; he reduced Nuttall's species to *Dalea carnea* var. *gracilis* (Nuttall) Barneby.

Barneby's view of the generic limits of *Dalea* is accepted. But the taxa so clearly recognized by Small and by Nuttall need restoration to the level of species.

Tephrosia virginiana (L.) Persoon var. mohrii (Rydberg) D. B. Ward, comb. et stat. nov. Basionym: *Cracca mohrii* Rydberg, N. Amer. Fl. 24: 163. 1923. TYPE: U.S.A. Florida: Walton Co., near Eucheeana, June 1880, *Mohr s.n.* (holotype, US).

Tephrosia mohrii (Rydberg) Godfrey & Kral is an endemic taxon of the Florida panhandle, known in only two counties (Clewell, 1985). Though similar to the widespread *T. virginiana*, it has been recognized as distinct by Small (1933), Godfrey and Kral (1958), and Clewell (1985). But Wood (1949), Isely (1990), and Wunderlin (1998) have combined it without distinction.

The distinction between *Tephrosia mohrii* and *T. virginiana* is not inconsiderable (cf. Godfrey & Kral, 1958; Clewell, 1985); *T. mohrii* is a much smaller plant, with smaller, less-pubescent leaflets. Even so, *T. virginiana* varies enough within itself (Isely, 1990) to justify the doubt of authors who are not familiar with the endemic variant in the field. An intermediate, varietal status is appropriate. This taxon, as *Tephrosia mohrii*, has been classified by the Florida Department of Agriculture as "threatened," under the criteria of Florida Statute 581.185.

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### NYCTAGINACEAE

Pisonia discolor Sprengel var. floridana (Britton)
D. B. Ward, comb. et stat. nov. Basionym: Pisonia floridana Britton, in Small, Fl. Southeast U.S. 411, 1330. 1903. TYPE: U.S.A. Florida: Monroe Co., among lime rocks, Rock Key, [date?], Blodgett s.n. (holotype, NY).

The forms of *Pisonia discolor* encountered in Florida may reflect "founder effect" selections from variable Caribbean populations. Bogle (1974) recognized two Florida varieties: variety *discolor* Sprengel (Syst. ii: 168, 1825), and variety *longifolia* Heimerl (Bot. Jahrb. Syst. 21: 627. 1896), both with glabrous to sparsely pubescent leaves. A third variant, *Pisonia floridana*, a plant with "copiously pubescent" leaves, was collected in the mid 1800s on Rock Key, 12 miles west of Key West, and not again seen (Bogle, 1974: 33). Plants with moderately pubescent leaves, perhaps representing this taxon, were found in 1994 on Long Key (R. Hammer, pers. comm., Dec. 1994).

Though the Florida variants perhaps intergrade and likely do not represent major segregates of the circum-Caribbean parental stock of *Pisonia discolor*, no harm is done by making available this third varietal combination *P. discolor* var. *floridana*, that may aid in documenting variability of the Florida entities.

## RUBIACEAE

Houstonia procumbens (Walter ex J. F. Gmelin) Standley var. hirsuta (W. H. Lewis) D. B. Ward, comb. nov. Basionym: Hedyotis procumbens (Walter ex J. F. Gmelin) Standley var. hirsuta W. H. Lewis, Ann. Missouri Bot. Gard. 53: 378. 1966. TYPE: U.S.A. Florida: Walton Co., Villa Tasso, 1 mi. W of Choctaw[hatchee] Bay, 28 May 1964, McDaniel 4707 (holotype, FSU).

The coastal-plain wildflower felicitously known to schoolchildren as Fairy-footprints varies greatly in pubescence. This trait was addressed by Lewis (1966) by recognition of the pubescent extreme as *Hedyotis procumbens* var. *hirsuta*. Neither Wilbur (1968) nor Terrell (1996) accepted the variety as a "biologically significant taxon," though Wilbur presented two maps (1968: 310) that recorded distribution of the glabrous and pubescent entities.

Long observation of the species in the field supports the evidence deduced from Wilbur's maps, that nearly all individuals may be readily assigned to one entity or the other (FLAS, D.B.W., annotated). It is true, as originally stated by Lewis and

fully confirmed by both Wilbur and Terrell, that the ranges are largely sympatric (though as noted by Wilbur, the pubescent form does not extend as far into South Carolina; it also is essentially absent from southern Florida (D.B.W., pers. obs.; Wilbur, 1968)). Though no argument can be made that these two entities are of high taxonomic significance, the lack of ambiguity in sorting specimens both in the herbarium and in the field makes retention of Lewis's taxa worthwhile.

Lewis (1966), however, was then in an inclusive mode that favored merger of closely related genera; he made the new combination under *Hedyotis*. In more recent years there has been an apparent consensus that *Houstonia* (and *Oldenlandia*) are best held separate (Terrell & Lewis, 1990; Terrell, 1990, 1991, 1996). With restoration of *Houstonia* (Terrell, 1996), Lewis's variety requires a new combination.

Acknowledgments. I thank the curators of the New York Botanical Garden for the loan of specimens critical to this study, James A. Macklin for photocopies of Nuttall types, Carol L. Lippincott for sharing her intimate knowledge of Florida *Imperata*, Wilbur H. Duncan for his experience and insight regarding *Yucca*, Daniel F. Austin, Kerry A. Barringer, Mark L. Gabel, Gerald F. Guala, James L. Reveal, and Edward E. Terrell for their suggestions in review of this paper, and Victoria C. Hollowell for her patient, meticulous editorial services.

#### Literature Cited

Ahles, H. E. 1964. New combinations for some vascular plants of southeastern United States. J. Elisha Mitchell Sci. Soc. 80(2): 172–173.

R. Bell, Manual of the Vascular Flora of the Carolinas. Univ. North Carolina Press, Chapel Hill.

Anderson, E. 1969. Experimental studies of the species concept. Ann. Missouri Bot. Gard. 55: 179-192.

Ashe, W. W. 1898. Notes on grasses. J. Elisha Mitchell Sci. Soc. 15: 112-114.

Austin, D. F. 1984. Resume of the Florida taxa of *Cereus* (Cactaceae). Florida Sci. 47: 68–72.

Barneby, R. C. 1977. Daleae imagines. Mem. New York Bot. Gard. 27: 1-891.

Benson, L. 1982. The Cacti of the United States and Canada. Stanford Univ. Press, Stanford.

Bogle, A. L. 1974. The genera of the Nyctaginaceae in the southeastern United States. J. Arnold Arbor. 55: 1– 37.

Britton, N. L. 1908. Studies of West Indian plants—II. *Harrisia*, a new genus of Cactaceae. Bull. Torrey Bot. Club 35: 561–566.

—— &. J. N. Rose. 1920. The Cactaceae. Carnegie Inst., Washington, DC.

Brummitt, R. K. 1998. Report of the Committee for Spermatophyta: 46. Taxon 47: 444.

Campbell, C. S. 1983. Systematics of the Andropogon vir-

- ginicus complex (Gramineae). J. Arnold Arbor. 64: 171–254.
- Chapman, A. W. 1860. Andropogon. In: Flora of the Southern United States. New York.
- ———. 1897. Andropogon. In: Flora of the Southern United States, ed. 3. New York.
- Chase, A. & C. D. Niles. 1962. Imperata. In: Index to Grass Species. G. K. Hall, Boston.
- Clayton, W. D. & S. A. Renvoize. 1986. *Imperata. In:* Genera Gramineum. Kew Bull. Addit. Ser. XIII, London.
- Clewell, A. F. 1985. Eupatorium, Liatris, Pityopsis, Tephrosia. In: Guide to the Vascular Plants of the Florida Panhandle. Univ. Presses Florida, Tallahassee.
- Cronquist, A. 1980. Eupatorium, Pithyopsis. In: Vascular Flora of the Southeastern United States, Vol. 1. Univ. North Carolina Press, Chapel Hill.
- Deam, C. C. 1940. Yucca. In: Flora of Indiana. Indiana Dept. of Conservation, Indianapolis.
- Dress, W. J. 1953. A Revision of the Genus *Chrysopsis* in Eastern North America. Ph.D. Dissertation, Cornell University, Ithaca.
- Duncan, W. H. & J. T. Kartesz. 1981. Yucca. In: Vascular Flora of Georgia: An Annotated Checklist. Univ. Georgia Press, Athens.
- Elliott, S. 1816. Andropogon. In: A Sketch of the Botany of South Carolina and Georgia. Charleston.
- Fernald, M. L. 1944. The identity of Yucca filamentosa. Rhodora 46: 5–9.
- Gabel, M. L. 1982. A Biosystematic Study of the Genus Imperata (Gramineae: Andropogoneae). Ph.D. Dissertation, Iowa State University, Ames.
- Gaiser, L. O. 1946. The genus *Liatris*. Rhodora 48: 165–183, 216–263, 272–326, 331–382, 393–412.
- Godfrey, R. K. 1988. *Yucca. In:* Trees, Shrubs, and Woody Vines of Northern Florida and Adjacent Georgia and Alabama. Univ. Georgia Press, Athens.
- ——— & R. Kral. 1958. *Tephrosia. In:* Observations on the Florida flora. Brittonia 10: 166–177.
- Greuter, W., J. McNeill, F. R. Barrie, H. M. Burdet, V. Demoulin, T. S. Filgueiras, D. H. Nicolson, P. C. Silva, J. E. Skog, P. Trehane, N. J. Turland & D. L. Hawksworth (editors). 2000. International Code of Botanical Nomenclature (Saint Louis Code). Regnum Veg. 138.
- Hitchcock, A. S. & A. Chase. 1951. Andropogon. Manual of the Grasses of the United States, 2nd ed. U.S. Dept. Agric. Misc. Publ. 200.
- Holm, L. 1969. Weed problems in developing countries. Weed Sci. 17: 113-118.
- Isely, D. 1990. *Tephrosia. In:* Vascular Flora of the Southeastern United States. Vol. 3, Part 2: Leguminosae (Fabaceae). Univ. North Carolina Press, Chapel Hill.
- Kral, R. 2001. In memoriam: Robert K. Godfrey. ASPT Newslett. 15: 4-5.
- —— & R. K. Godfrey. 1958. Synopsis of the Florida

- species of Cacalia (Compositae). Quart. J. Florida Acad. Sci. 21: 193–206.
- Lewis, W. H. 1966. Typification of *Hedyotis procumbens* (Rubiaceae) and a new variety from southeastern United States. Ann. Missouri Bot. Gard. 53: 377–378.
- Linnaeus, C. 1753. Yucca. In: Species Plantarum. Stock-holm.
- Lippincott, C. L. 1997. Ecological Consequences of *Imperata cylindrica* (cogongrass) Invasion in Florida Sandhill. Ph.D. Dissertation, University of Florida, Gainesville.
- Long, R. W. 1970. Additions and nomenclatural changes in the flora of southern Florida—I. Rhodora 72: 17-46.
- Nicolson, D. H. 1999. Report of the General Committee: 8. Taxon 48: 375.
- Pippen, R. W. 1978. Cacalia. In: N. Amer. Flora, ser. II, part 10.
- Semple, J. C. & F. D. Bowers. 1985. A revision of the goldenaster genus *Pityopsis* Nuttall (Compositae: Astereae). Univ. Waterloo Biol. Ser. 29.
- Small, J. K. 1897. Studies in the botany of the southeastern United States—XII. Bull. Torrey Bot. Club 24: 487–496.
- ———. 1903. Chrysopsis. In: Flora of the Southeastern United States. New York.
- ——. 1933. Liatris, Petalostemon, Pityopsis, Yucca. In: Manual of the Southeastern Flora. New York.
- Terrell, E. E. 1990. Synopsis of *Oldenlandia* (Rubiaceae) in the United States. Phytologia 68: 125–133.
- ———. 1996. Revision of *Houstonia* (Rubiaceae–Hedyotideae). Syst. Bot. Monogr. 48: 1–118.
- ——— & W. H. Lewis. 1990. Oldenlandiopsis (Rubiaceae), a new genus from the Caribbean basin, based on Oldenlandia callitrichoides Grisebach. Brittonia 42: 185–190.
- Trelease, W. 1902. The Yuccas. In: Rep. (Annual) Missouri Bot. Gard. 13: 27-133.
- Wagenitz, G. 1995. Proposal to reject the name Cacalia L. (Compositae: Senecioneae). Taxon 44: 445.
- Ward, D. B. 2001. New combinations in the Florida flora. Novon 11: 360-365.
- Wemple, D. K. 1970. Revision of the genus *Petalostemon* (Leguminosae). Iowa State Coll. J. Sci. 28, 45: 1–102.
- Wilbur, R. L. 1968. The status of Hedyotis procumbens var. hirsuta (Rubiaceae). Rhodora 70: 306-311.
- Wood, C. E. 1949. The American barbistyled species of *Tephrosia* (Leguminosae). Rhodora 51: 193–231, 233–302, 369–384.
- Wunderlin, R. P. 1998. Eupatorium, Harrisia, Imperata, Liatris, Pityopsis. In: Guide to the Vascular Plants of Florida. Univ. Presses Florida, Gainesville.
- —— & B. F. Hansen. 2001. Seven new combinations in the Florida flora. Novon 11: 366–369.